

### Increasing the adoption of materials modelling with SMEs

#### Introduction

The wider and successful adoption of materials modelling by SMEs is currently rather limited. Among the hindering factors are the narrow domain of products/specialty of SMEs, their limited research budget, high software costs, lack of internal expertise (staff is limited), lack of data available for model validation and lack of robustness, accuracy and flexibility of the models. The confidence of the SMEs in the benefits of the modelling still needs to be gained. Therefore this session targets to discuss opportunities that can facilitate the implementation of modelling by the SMEs, such as material modelling market places, data availability and tools enabling evaluation of the benefits from modelling.

#### Objectives

- To discuss possibilities for SMEs to receive service from software and model developers applied for their specific cases, at favorable conditions.
- To discuss and identify opportunities for SMEs to have access to modelling and experimental/validation data, as a way to stimulate and engage their interest in using modelling.
- To stimulate SMEs in initiating modelling case studies and inform them on possible tools for evaluating the benefits from modelling.

#### Background information and documents

The short time frames and often the insufficient internal expertise on modelling inside the SMEs, for them it could be more interesting to engage in a **service**-type of activity rather than in research project, considering simple models that don't require experts and are not expensive. Such a service can be provided by the material modelling **market places** where the SMEs can navigate through the different modelling possibilities or to search for translators and software service providers for their specific case. Therefore it is of importance to create database of models, software and translators within the market places.

In order to assess the benefits of using materials modelling, the SMEs will need business cases including return on investment strategy for utilizing modelling data. Making **modelling and validation data accessible** to the SME prior a modelling project starts may convince them to further explore the benefits of modelling.

A set of **standard tools to assess the economic impact** of modelling, for example the financial impact with ROI, would be useful for SEMs to define their business cases. Tools such as spreadsheet, report/guide or video need to be made available for this purpose, as well as **case studies** from SMEs demonstrating the benefits of the modelling.

#### Discussion points and questions

The following questions summarize the issues for this session.

- SMEs often lack sufficient internal expertise or experience to evaluate the modelling costs and to understand the possibilities of modelling. Therefore they may need help, for example from the translators, to identify the value of modelling for their business.

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However, this service may be too expensive and investing in internal experts to do this job (as additional expertise) could be a more valuable option. Discuss both possibilities and their advantages and drawbacks.

- For SMEs acquiring software license may be not be always good option because they often need it only for short period (project duration is short and the topics of the projects is often very different). How can they still make use of needed software at favourable conditions? Is academic software an option or too specific/complex for most of the SMEs?
- How can the market places help SMEs to implement more extensively materials modelling?
- How to make SMEs aware of the possibilities to use already available data for their own challenges?
- For SMEs additional funding from various agencies is often desired. Are the SMEs sufficiently aware of different funding opportunities or they still need help for that and from whom?